

AMENDMENTS TO THE CLAIMS

1. (Original) An integrated pixel sensor structure comprising:
a light sensitive diode including a transparent conductor; and,
a protective layer placed above the transparent conductor, the protective layer including a set of diffraction grating elements for producing complementary colors.
2. (Original) The structure of claim 1, where the protective layer includes anti-reflection properties.
3. (Currently Amended) The structure of claim 1, where the light sensitive diode is compatible with and the protective layer is a material suitable for use with metal oxide semiconductor fabrication processes ~~that are compatible with the light sensitive diode.~~) *add*
4. (Original) The structure of claim 1, where the set of diffraction grating elements include a set of four step echelon grating elements.
5. (Original) A system comprising:
an integrated pixel sensor structure having:
a light sensitive diode including a transparent conductor; and,
a protective layer placed above the transparent conductor, the protective layer including a set of diffraction grating elements for producing complementary colors; and,
a post capture signal processing unit coupled to the integrated pixel sensor.
6. (Original) The system of claim 5, where the protective layer includes anti-reflection properties.
7. (Currently Amended) The system of claim 5, where the protective layer is of a sol gel material suitable for fabrication processes that are compatible with the light sensitive diode.
8. (Original) The system of claim 5, where the set of diffraction grating elements include a set of four step echelon grating elements.

9. (Original) An apparatus comprising:
a light sensitive means;
a transparent conductor means displaced above the light sensitive means; and,
a protective layer means placed above the transparent conductor means, the
protective layer means including a set of diffraction grating means for producing
complementary colors.
10. (Original) The apparatus of claim 9, where the protective layer means includes
anti-reflection properties.
11. (Currently Amended) The apparatus of claim 9, where the protective layer
means is a material suitable for metal oxide semiconductor integrated circuit fabrication
processes ~~that are compatible with the light sensitive means.~~
12. (Original) The apparatus of claim 9, where the set of diffraction grating means
include a set of four step echelon grating elements.
13. (Original) A method comprising:
providing a light sensitive element;
placing a transparent conductor above the light sensitive element; and,
placing a protective layer above the transparent conductor, the protective layer
including a set of diffraction grating elements for producing complementary colors.
14. (Original) The method of claim 13, where placing the protective layer includes
placing a material with anti-reflection properties above the transparent conductor.
15. (Original) The method of claim 13, where placing the protective layer includes
placing a material suitable for fabrication processes that are compatible with the light
sensitive element.
16. (Original) The method of claim 13, where the set of diffraction grating elements
include a set of four step echelon grating elements.
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17. (New) An integrated circuit die comprising:
an image sensing area of the die having a plurality of light-sensitive diodes
formed above a metalization layer of the die; and
a protective layer of the die, wherein the protective layer is to protect the
plurality of diodes and is shaped as a diffraction grating.

18. (New) The integrated circuit die of claim 17 wherein the plurality of diodes have
amorphous silicon as their photo-active material.

19. (New) The integrated circuit die of claim 18 wherein each of the plurality of
diodes has a n-i-p structure.

20. (New) The integrated circuit die of claim 19 wherein each of the n and p portions
of the n-i-p structure is thin relative to the i portion.

21. (New) The integrated circuit die of claim 18 wherein the plurality of diodes have
a transparent conductor made of an indium tin oxide (ITO) layer that forms a top
contact of the plurality of diodes.

22. (New) The integrated circuit die of claim 18 wherein the plurality of diodes have
a transparent conductor that forms a top contact of the plurality of diodes and wherein
the protective layer has a low enough deposition temperature so as not to
environmentally stress the transparent conductor.

23. (New) The integrated circuit die of claim 17 wherein the protective layer has anti-
reflective properties to act as an antireflective filter for the image sensing area of the
die.

24. (New) The integrated circuit die of claim 22 wherein the diffraction grating is
designed to impart RGB color sensing to the image sensing area of the die.

25. (New) The integrated circuit die of claim 22 wherein the protective layer is made
of a sol-gel material.

26. (New) The integrated circuit die of claim 17 wherein the plurality of diodes and the protective layer are compatible with a metal oxide semiconductor (MOS) fabrication process.
